PATENT
Customer Number 22,852
Attorney Docket No. 7040.0102.00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Federico MANCOSU et al.	)	
	)	
Serial No.: Not yet assigned	)	Group Art Unit: Not yet assigned
	)	
Filed: September 24, 2001	)	Examiner: Not yet assigned
	)	
For: DEVICE FOR CONTINUOUSLY MEASURING DEFORMATIONS IN A TYRE DURING THE TRAVEL MOVEMENT OF A MOTOR VEHICLE	)	

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Prior to the examination of the above-captioned application, please amend this application as follows:

IN THE SPECIFICATION:

Please amend the specification, as follows:

Add two section headings, a section subheading, and a paragraph immediately after the title DEVICE FOR CONTINUOUSLY MEASURING DEFORMATIONS IN A TYRE DURING THE TRAVEL MOVEMENT OF A MOTOR VEHICLE, as follows:

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
ASHINGTON, DC 20005
202-408-4000

--CROSS-REFERENCES TO RELATED APPLICATIONS

This application is a national stage entry under 35 U.S.C. § 371 from International Application No. PCT/EP01/00815, filed January 24, 2001, in the European Patent Office; additionally, Applicants claim the right of priority under 35 U.S.C. § 119(a) - (d) based on patent application No. 00830041.0, filed January 25, 2000, in the European Patent Office; further, Applicants claim the benefit under 35 U.S.C. § 119(e) based on prior-filed, copending provisional application No. 60/199,385, filed April 25, 2000, in the U.S. Patent and Trademark Office; the contents of all of which are relied upon and incorporated herein by reference.

BACKGROUND OF THE INVENTION

Field of the Invention--

Page 1, line 7, add section subheading --Description of the Related Art-- prior to the start of the paragraph beginning "During the travel movement of a motor vehicle . . . ."

Page 2, line 9, add section heading --SUMMARY OF THE INVENTION-- prior to the start of the paragraph beginning "It has now been found that it is possible . . . ."

Page 5, line 1, add section heading --BRIEF DESCRIPTION OF THE DRAWINGS-- prior to the start of the paragraph beginning "Characteristic features and advantages . . . ."

LAW OFFICES
KNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

Page 5, line 18, add section heading --DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS-- prior to the start of the paragraph beginning "Fig. 1 shows a tyre 1 for a motor vehicle . . . ."

Delete the Abstract in its entirety and add a new Page 15 after the claims, adding the following ABSTRACT OF THE DISCLOSURE. A new, separate Page 15 including the ABSTRACT OF THE DISCLOSURE is enclosed.

--ABSTRACT OF THE DISCLOSURE

A device for continuously measuring deformations in a tyre mounted on a rim includes at least one emitter, at least one reflecting element, and at least one optical sensor of luminous intensity. The at least one emitter and the at least one optical sensor are disposed on the rim. The at least one reflecting element is disposed on a portion of an inner surface of the tyre. The at least one emitter emits a light beam toward the at least one reflecting element, the at least one reflecting element reflects the light beam toward the at least one optical sensor, and the at least one optical sensor receives the reflected light beam, measures a prechosen physical parameter associated with the reflected light beam, and provides a signal representing a deformation of the tyre on the portion of the inner surface of the tyre.--

IN THE CLAIMS:

Please cancel, without prejudice or disclaimer, claims 2-9, and add new claims 10-25, as follows:

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
/ASHINGTON, DC 20005
202-408-4000

--10. (new) A device for continuously measuring deformations in a tyre mounted on a rim, comprising:

at least one emitter;

at least one reflecting element; and

at least one optical sensor;

wherein the at least one emitter and the at least one optical sensor are disposed on the rim, wherein the at least one reflecting element is disposed on a first portion of an inner surface of the tyre,

wherein the at least one emitter emits a light beam toward the at least one reflecting element, wherein the at least one reflecting element reflects the light beam toward the at least one optical sensor, and

wherein the at least one optical sensor receives the reflected light beam, measures a first prechosen physical parameter associated with the reflected light beam, and provides a first signal representing a deformation of the tyre on the first portion of the inner surface of the tyre.

11. (new) The device of claim 10, wherein the first prechosen physical parameter is a luminous intensity of the reflected light beam.

12. (new) The device of claim 10, wherein the at least one optical sensor is operationally connected to a processor, and wherein the processor:

determines, using the first signal, a displacement of at least one point on the first portion of the inner surface of the tyre in a predetermined direction; and

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
ASHINGTON, DC 20005
202-408-4000

provides an output signal representing the displacement of the at least one point on the first portion of the inner surface of the tyre in a predetermined direction.

13. (new) The device of claim 10, further comprising:

a second emitter;

a second reflecting element; and

a second optical sensor;

wherein the second emitter and the second optical sensor are disposed on the rim, wherein the second reflecting element is disposed on a second portion of the inner surface of the tyre near the first portion of the inner surface of the tyre,

wherein the second emitter emits a second light beam toward the second reflecting element, wherein the second reflecting element reflects the second light beam toward the second optical sensor, and

wherein the second optical sensor receives the reflected second light beam, measures a second prechosen physical parameter associated with the reflected second light beam, and provides a second signal representing a variation in distance between the second portion of the inner surface of the tyre and the rim.

14. (new) The device of claim 13, wherein the second prechosen physical parameter is a luminous intensity of the reflected second light beam.

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
ASHINGTON, DC 20005
202-408-4000

15. (new) The device of claim 13, wherein the second prechosen physical parameter is a time difference between the second emitter emitting the second light beam and the second optical sensor receiving the reflected second light beam, and

wherein the second light beam has a given wavelength.

16. (new) The device of claim 13, wherein the optical sensors are operationally connected to one or more processors, and wherein the one or more processors:

determine, using the first signal, a displacement of at least one point on the first portion of the inner surface of the tyre in a predetermined direction;

correct the displacement depending on the second signal; and

provide an output signal representing the corrected displacement of the at least one point on the first portion of the inner surface of the tyre in a predetermined direction.

17. (new) The device of claim 16, wherein the one or more processors provide a measurement of a vertical compression of the tyre based on the second signal.

18. (new) A motor vehicle wheel, comprising:

a tyre mounted on a rim; and

a device for continuously measuring deformations in the tyre;

where the device comprises:

at least one emitter;

at least one reflecting element; and

at least one optical sensor;

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
/ASHINGTON, DC 20005
202-408-4000

wherein the at least one emitter and the at least one optical sensor are disposed on the rim, wherein the at least one reflecting element is disposed on a first portion of an inner surface of the tyre,

wherein the at least one emitter emits a light beam toward the at least one reflecting element, wherein the at least one reflecting element reflects the light beam toward the at least one optical sensor, and

wherein the at least one optical sensor receives the reflected light beam, measures a first prechosen physical parameter associated with the reflected light beam, and provides a first signal representing a deformation of the tyre on the first portion of the inner surface of the tyre.

19. (new) The motor vehicle wheel of claim 18, wherein the first prechosen physical parameter is a luminous intensity of the reflected light beam.

20. (new) The motor vehicle wheel of claim 18, wherein the at least one optical sensor is operationally connected to a processor, and wherein the processor:

determines, using the first signal, a displacement of at least one point on the first portion of the inner surface of the tyre in a predetermined direction; and

provides an output signal representing the displacement of the at least one point on the first portion of the inner surface of the tyre in a predetermined direction.

21. (new) The motor vehicle wheel of claim 18, wherein the device further comprises:

a second emitter;

a second reflecting element; and

a second optical sensor;

wherein the second emitter and the second optical sensor are disposed on the rim, wherein the second reflecting element is disposed on a second portion of the inner surface of the tyre near the first portion of the inner surface of the tyre,

wherein the second emitter emits a second light beam toward the second reflecting element, wherein the second reflecting element reflects the second light beam toward the second optical sensor, and

wherein the second optical sensor receives the reflected second light beam, measures a second prechosen physical parameter associated with the reflected second light beam, and provides a second signal representing a variation in distance between the second portion of the inner surface of the tyre and the rim.

22. (new) The motor vehicle wheel of claim 21, wherein the second prechosen physical parameter is a luminous intensity of the reflected second light beam.

23. (new) The motor vehicle wheel of claim 21, wherein the second prechosen physical parameter is a time difference between the second emitter emitting the second light beam and the second optical sensor receiving the reflected second light beam, and

wherein the second light beam has a given wavelength.

24. (new) The motor vehicle wheel of claim 21, wherein the optical sensors are operationally connected to one or more processors, and wherein the one or more processors:

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
/ASHINGTON, DC 20005
202-408-4000

determine, using the first signal, a displacement of at least one point on the first portion of the inner surface of the tyre in a predetermined direction;

correct the displacement depending on the second signal; and

provide an output signal representing the corrected displacement of the at least one point on the first portion of the inner surface of the tyre in a predetermined direction.

25. (new) The motor vehicle wheel of claim 24, wherein the one or more processors provide a measurement of a vertical compression of the tyre based on the second signal.--

REMARKS

Applicants submit this Preliminary Amendment together with a national stage entry under 35 U.S.C. § 371.

In this Amendment, Applicants add section headings, section subheadings, and a new Abstract of the Disclosure to conform to U.S. practice. Additionally, Applicants add claims to the right of priority and benefit. Further, Applicants cancel, without prejudice or disclaimer, claims 2-9, and add new claims 10-25, which include the same subject matter as the original claims, to improve clarity. The originally-filed specification, claims, abstract, and drawings fully support the amendments to the specification and the addition of new claims 10-25. No new matter was introduced.

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
/ASHINGTON, DC 20005
202-408-4000

If there is any fee due in connection with the filing of this Preliminary Amendment, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

Dated: September 24, 2001

By:_____
Lawrence F. Galvin
Reg. No. 44,694

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
ASHINGTON, DC 20005
202-408-4000

ABSTRACT OF THE DISCLOSURE

A device for continuously measuring deformations in a tyre mounted on a rim includes at least one emitter, at least one reflecting element, and at least one optical sensor of luminous intensity. The at least one emitter and the at least one optical sensor are disposed on the rim. The at least one reflecting element is disposed on a portion of an inner surface of the tyre. The at least one emitter emits a light beam toward the at least one reflecting element, the at least one reflecting element reflects the light beam toward the at least one optical sensor, and the at least one optical sensor receives the reflected light beam, measures a prechosen physical parameter associated with the reflected light beam, and provides a signal representing a deformation of the tyre on the portion of the inner surface of the tyre.

LAW OFFICES
NNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
VASHINGTON, DC 20005
202-408-4000